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ORIGINAL ARTICLES.

HYSTERIA IN OPHTHALMOLOGY.[1]

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HYSTERIA, as commonly known, embraces a multiplicity of morbid phenomena, and is used as a name to denote disease or a train of symptoms depending upon an abnormal condition of the nervous system and of the mind and entering largely as a morbid element into a variety of affections.

A hysterical condition, as regards the mind, involves a morbid susceptibility to emotions and a defective power of will to restrain their manifestations.

A tendency to exaggerate subjective symptoms of disease often enters with the hysterical condition, proceeding sometimes, from an exaggerated sense of existing symptoms, often from a morbid desire to excite interest or sympathy.

It is an important part of the knowledge and tact of the practitioner to make due allowance for this tendency, in his investigation of symptoms, as in many cases a morbid perversion of the mind leads patients to practice gross frauds as regards

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their ailments. They pretend to have extraordinary disorders, and resort to ingenious and persevering efforts of deception. Here, too, the knowledge and tact of the physician is called into requisition to discriminate between the real and the false or imaginary ailment, for upon the true determination, as to the extent hysteria enters as a factor, must depend the line of treatment.

Yet in this connection we must not lose sight of the fact that hysterical self-deception may be present in some patients who are in no wise to be classed as malingerers, as they have no deliberate purpose in deceiving.

Osler, in his "Principles and Practice of Medicine," page 967, states: "Of predisposing causes of hysteria, two are important, heredity and education. The former acts by endowing the child with a mobile, abnormally sensitive nervous organization. We see cases most frequently in families with marked neuropathic tendencies, the members of which have suffered from neuroses of various sorts. Education at home too often fails to inoculate habits of self-control. A child grows to girlhood with an entirely erroneous idea of her relation to others, accustomed to having every whim gratified, and abundant sympathy lavished on every woe, however trifling. She reaches womanhood with a moral organization unfitted to withstand the cares and worries of every-day life. At school, between the ages of twelve and fifteen, the most important period of her life, when the vital energies are absorbed in the rapid development of the body, she is often cramming for examinations and cooped up in close school-rooms for six or eight hours daily. The result is too frequently an active, bright mind in an enfeebled body, ill-adapted to subserve the functions for which it was framed, especially disordered, and prone to react abnormally to the ordinary stimuli of life." The nervous and mental disorders which constitute what is commonly known as hysteria or the hysterical condition may be associated to a greater or lesser degree in a host of affections; our purpose, however, is to consider this condition and its manifestations in the many remarkable functional disturbances caused therefrom, from the standpoint of the ophthalmologist.

In my opinion this subject has not been given enough prominence in the ophthalmic literature. A few writers dismiss

the subject with a brief mention of the fact that certain eye affections may be associated with hysteria; again, we find a paragraph devoted merely to naming conditions of the eyes that may be dependent upon the hysterical condition.

Noyes, in his "Diseases of the Eye," says: "Hysterical amblyopia, or as it is sometimes called, retinal anæsthesia, is a recognized condition, and has been studied by Charcot, Landolt and others. It is temporary, irregular, and attended by other hysterical symptoms. Hemi-anæsthesia is sometimes a characteristic of the cases."

There may be only one eye affected, and but one-half of the field. There may be only central scotomy. A case of hysterical blindness, or perhaps rather simulation, lasting ten years, is reported by Harlan, "Trans. Amer. Oph. Soc." 1889: "Hysterical hyperæsthesia retinæ, no visible disease of the tissues which may cause photophobia, no morbid disease of the fundus found, very frequently brought on by a preceding illness, an uncorrected error of asthenopic condition due to muscular insufficiency. Another affection, known as asthenopia retinæ, due to a general nervousness; the patients are usually anæmic, neurasthenic, or hysterical. In these cases complaint is made of deficient endurance in working, with darkening and swimming of objects looked at. After excluding errors of refraction and accommodation, insufficiency of the muscles, and disease of the fundus, we can generally assume only nervous causes."

De Schweinitz, in his work, page 484, states: "Hysterical blindness usually occurs in young girls and women; but both males and females may be affected. The loss of vision is complete, almost always mono-lateral, the pupils act promptly to light when the sound eye is covered. The ophthalmoscopic appearance is normal. Quite commonly it is possible to prove by the usual tests that the supposed blind eye sees. In addition to monocular blindness there is a large group of cases in which achromatopsia or dyschromatopsia, contraction of the field of vision, and hemi-anæsthesia constitute the symptoms. Sometimes, instead of simple contraction of the field of vision, there is a hemianopsia." * * * "Partial or complete color-blindnes sometimes occurs and often with a more or less reversal of the colors as they normally appear."

Schmidt-Rimpler mentions retinal anæsthesia (amblyopia

of the visional field) as particularly prone to be hysterical in character, and adds: "There comes a peculiar, usually bilateral, and quite rapidly developing form of moderate impairment of vision. It is attended with decided concentric narrowing of the visual field and with disturbance of the light and color-sense, vision usually better in twilight than in bright illumination. In unilateral blindness in hysterical patients it is a question whether we have not to deal with a psychical suppression of the visual impressions."

I think there is no longer a doubt in the minds of the majority of ophthalmologists and neurologists that long-continued eye-strain may cause hysterical manifestations as demonstrated by Stevens in his work on "Functional Nervous Diseases." He not only solved the problem as to the cause of those obscure cases that were indiscriminately classed under the general head of asthenopia, but gave us a radical treatment therefore. So commonly is the lack of muscle balance the cause of the hysterical condition, that I presume there is not one among you who has not met with one or more cases. In these conditions we have to combat, not purely an imaginary or nervous condition, *per se*, but a functional disturbance produced by a weakend muscle or set of muscles attempting to perform their function, meanwhile expending a greater amount of vital energy and nervous force than is normally demanded to accomplish this purpose; this continues until there is a general nervous disturbance, with the varied train of symptoms, which usually accompany these conditions. Another class of cases with the nervous phenomena very marked and where we find absolutely no morbid condition present to account for the symptoms, are those in which there is intense intolerance of light, not allowing even a ray of light in the room where they are confined. I recall a case in a young lady, whom I had previously treated for hysterical aphonia; she had not spoken or whispered for several weeks. One day, while riding upon a street-car enroute to the office, a run-a-way horse collided with the car and so frightened my patient that she gave vent to a shriek and began talking; there was no relapse into the former condition. She was brought to the office, her eyes covered with layer after layer of dark cloth bandages, which she would not allow me to remove until the room was thoroughly darkened. She complained only of her inability to open her eyes

where it was light and cried with pain when the closed eyes were exposed in a dimly lighted room; there was no pain when the eyes were bandaged. Careful inquiry into the history of the case furnished no clew for the existing condition. In talking with her father I learned that the present condition had persisted for three days and that the attack had followed closely the father's instructions to her, to cease going with a young gentleman of whom she was apparently very fond. Having in mind her previous attack of aphonia, I concluded that this attack was of the same nature. I informed her it was necessary to chloroform her to operate upon her eyes. She was promptly anæsthetized and I proceeded to make a careful inspection of the eyes and appendages and found absolutely nothing present to account for the photophobia.

She was allowed to come out of the anæsthesia in a well-lighted room without a bandage on the eyes. As she was slowly awakening I assured her she would see and that the light would not hurt her eyes, also that she would be well within a week. She was then taken home in a carriage; the result was all that could be desired.

CASE 2.—A young lady, aged 17 years, apparently in perfect health, was brought to me by her mother on account of a slight deafness, which I found to be caused by impacted cerumen. During the examination of the ears she was very nervous, fearing that she would be hurt. While trying to reassure her that she would not be hurt, I noticed one of the eyes converging to a marked degree. I placed my hand over the eye and found, apparently, alternating squint. Inquiring of her mother why she did not attend to her eyes, she answered, "she has no trouble with her eyes." I explained to her the possibility of some error of refraction being present, and after removing the cerumen from the ears, proceeded to examine the eyes. I found in each eye $^{20}/_{xx}$. The ophthalmometer did not show any corneal astigmatism, there was no manifest error in either eye. I then ordered atropine gr. ij to ℥ j, two drops instilled four times daily. In three days she returned, and to my astonishment there was no squint and her vision was $^{20}/_{xxv}$ + and with + .25 D. V. was $^{20}/_{xx}$ +. Fourteen days later she presented herself and I found absolutely no convergence and only $^{1}/_{4}^{\circ}$ of hyperphoria. Several examinations of the muscles

were made with the same result. Nothing further was done for her eyes.

Her mother recently informed me that she had noticed the eyes crossing occasionally when she was much excited but they did not remain crossed. I recorded the case as one of hysterical transitory alternating squint.

Through the kindness of Dr. J. Elliott Colburn I append the report of two cases that were undoubtedly of a hysterical nature.

The first case was of hysterical deafness, amblyopia and color-blindness occurring in a Swedish woman, unmarried, and with no other disease apparent. She was 28 years of age, rather slight, and a blonde; rather of the stoical temperament. She complained for some time of lowered vision in the left eye, with disturbed vision in the right, she also was deaf in left ear. Tests of her hearing convinced me that the deafness in the left ear was emotional, and further investigation showed that there was no change in the appearance of the drum, and no response to the tuning-fork when held at proper distance from the ear, or when the handle was held upon the sides of the head. Testing each eye separately we found that she was totally blind in the left eye, and blind to red in the right. I called Dr. P.'s attention to the case, and he hypnotized her. Upon suggestion, she was enabled to read ordinary print with either eye, and was able to distinguish the colored worsteds and colored disks without difficulty. Upon making suggestion the power of hearing was also brought up to normal. This condition would last for several hours after the treatment. She remained in the hospital a short time, and finally disappeared. I do not know the ultimate result as far as the treatment was concerned.

The other case was a Miss R. who had been subject to headaches for some time. She had consulted an oculist and had glasses supplied, but as there was some spasm of accommodation, she did not wear them with comfort. About this time she was behind with her work at school, and was endeavoring to make up by added hours of study. She had some photophobia, and for a few days was obliged to stay in the dark room. When she came out the intolerance of light was great, and she complained that she could not open her eyes without her glasses (weak sphero-cylinders). I found that

there was slight oscillating nystagmus upwards and downwards. I was convinced that we had a case of hysterical photophobia, and demonstrated the fact by placing a pair of plain glasses in front of her eyes, with the assurance that they would give her all the relief that her own glasses gave, which was a fact. Immediately upon their removal, the eyes turned upwards, working spasmodically, and no persuasion could induce her to bring them into the normal condition. I then pressed firmly upon the nose at the inner canthus, and bade the girl to sleep; after some little time she obeyed, and upon suggestion, opened her eyes and read small type without difficulty. I then instilled into each eye two drops of a 1 gr. to the ounce solution of eserine assuring her that she would have no return of the trouble, and would be able to wear her glasses without difficulty. In a few days I was able to make a careful study of her refraction and of the muscle balance and found that she had three degrees of left hyperphoria; this I corrected by tenotomies. The correction given for the error of refraction was continued.

A recent letter from her informs me that she has had no return of the spasms or photophobia, and is able to use her eyes comfortably.

I have no doubt that the hyperphoria, together with her impaired health, had much to do with the hysterical manifestations.

In the treatment of cases of hysteria which may come into the hands of the ophthalmologist, as in the cases of the neurologist, the tact and judgment of the physician must be brought into play. Ranney, in his "Lectures on Nervous Diseases," says: "It is very essential in the first place that the doctor has the respect and full confidence of the patient. The impression made upon the mind of the patient by the personal characteristics of her medical attendant has often a great deal to do with the efficacy of the steps employed for the relief of the symptoms. Possibly this accounts for the fact that recoveries have occurred under lines of treatment which could have had little, if anything, to do with the benefits derived. We are all apt to think that any given patient recovers in consequence of some medicinal agent that we may have administered, when perhaps the mind of the patient has simply been forcibly influenced. In the second place we must make such subjects believe that their symptoms are perfectly understood, that all

points of the case have been thoroughly noted and examined, and that there is strong reason to hope for complete recovery. Ridicule, or the implication that the symptoms are purely imaginary, is apt to destroy the physician's influence over the patient, etc."

Approving the above as very essential in the successful treatment of these nervous patients, I would go further, having very great confidence in the mind treatment. I would therefore, in cases where we are satisfied, after careful examination, that we have simply some functional derangement due to a hysterical condition, formulate a plan of treatment having as the main factor, mind-impression, or suggestion; if unable to control the mind sufficiently to hope for a successful result without it, hypnotism may be resorted to. The physician must establish perfect confidence in the patient, otherwise his assurance or suggestions would be fraught with little, if any, good; additional attention must be given to the patient's hygienic surroundings, some medication in the way of a nervine or nerve tonic may be of service. It is always well to impress upon their minds that it is important that they carry out carefully the directions regarding the use of the medicine, whether it be a collyrium or internal medication. Frequently we have patients presenting themselves in a highly nervous condition, complaining of a varied train of eye symptoms all of which disappear in curing a slight miliary or papillary ophthalmia. It has been proven satisfactorily, I think, to a notably large number of eminent neurologists that eye-strain enters largely as a factor, in exciting the recurring attacks in hysteria and epilepsy. That epilepsy can be relieved or cured, in many cases, by correcting the refractive errors and all muscular insufficiencies that may exist should be no longer doubted. After several years of painstaking investigation Dr. A. L. Ranney has given us reports of a great number of epileptics either much benefited or cured by graduated tenotomies, and he goes so far as to recommend the examination of the eyes of all hysterical patients, and cites numerous cases which have been cured by graduated tenotomies. He is, indeed, a skeptic, who does not accept the reports of so eminent a neurologist, as scientific truths, in spite of the quibblings of certain eminent (?) specialists who question the results of this treatment in the class of cases mentioned. If one does not wish to employ

hypnotism, or is unable to get the mind of the patient under his control, an anæsthetic may be resorted to. It should be administered until there is profound narcosis, meanwhile, reassuring suggestions should be given the patients both in going under and coming out of the anæsthesia, keeping prominently before them the fact that they will be well after they sleep; in this way we may obtain control of the mind of the hysterical subject and overcome, for a time at least, the distressing conditions which have previously existed. In cases where we resort to hypnosis in order to secure good results it must be profound, and the patient thoroughly under the will of the operator.

Dr. Frank S. Milbury, in the *New York Medical Record* of March 20, under the head of "Hysterical Amblyopia," cites three cases, one of which was blind for seven years. Hypnotism had been tried without benefit; she was completely cured by mind impression. I quote from the author's article as follows: "Something, I do not know what, induced me to look in her mouth; but there I found a badly broken-down second superior left biscuspid. Intentionally, I enthusiastically exclaimed that I had found the cause of all her trouble. She doubtingly asked me, 'What?' and I told her that the disease of the tooth was in such a way connected with the eye as to produce pressure and thus cause blindness, and if removed it would end her infirmity. As will be presumed her faith was weak indeed, and it took many days and much talk to convince her that I was right. However, eventually she was convinced, and wanted it out at once; but I delayed several days for the purpose of having the fact fully impressed on her mind. I had explained my scheme to her father and he also built a big castle in the air in fear and trembling. At last it was concluded to extract the offending tooth. She wanted gas, but I told her that in a measure that would destroy the effect, as the more it hurt her the better she would see. So out it came, and complete restoration of vision followed, and remained normal to the time of her death from typhoid fever, over two years later"

The other two cases mentioned in the article were in children, both of whom were completely restored by suggestions while in the hypnotic state.

Regarding the curing of disease by suggestion or mind impression as the result of his studies, Charcot believed that

not all persons are proper subjects for miraculous healing, but only those whose maladies are capable of being influenced by the action of the mind on the body, that is to say the hysterical.

"Suggestion, either from outside or of autochthonous origin, is the therapeutic agent, and in suitable subjects, *i. e.*, the hysterical of either sex, the influence of the mind on the body is sufficiently powerful to bring about recovery from maladies which, but a short time ago, owing to our ignorance of their nature, were incurable."

Although we are unable to give a satisfactory and scientigc reasoning of these apparently supernatural cures, we must acknowledge their existence, and ought, as conscientious physicians, to avail ourselves of them when other resources fail us.

A SENILE AND PYRAMIDAL CATARACT IN ONE SUBJECT.[1]

BY GEO. F. SUKER, M.D., TOLEDO, OHIO.

IT IS not without some misgiving that I present this paper to the Society, because such cases are not as numerous as one might expect, hence little is or can be said, but much conjectured. It is for this reason that I present this paper for your consideration.

Whether or not the following case is unique I dare not assert; for, some of you may have had similar cases and could thus enlighten me on this subject which has deeply interested me for some time. Every possible source of information was resorted to, still, very little was found which had any direct or indirect bearing upon the question. Bear in mind that the literature is very scant upon the subject of the development or appearance of two distinct varieties of cataract in one eye.

Again, our literature upon pyramidal cataracts is very meagre. This may be said especially of the treatment. A mere mention of this kind of cataract and its treatment is given

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in the text-books, and very little on the subject finds its way into our medical journals.

With these brief introductory remarks, allow me to cite the following case; and then let us theorize as to what can be and what ought to be done in like cases.

Mrs. S. M. C., aged 52 years, housewife; family and personal history good; never had any inflammatory trouble of the eyes. Her vision in the right eye has been good at all times. The vision in the left eye has been poor since childhood, *i. e.*, never could recognize objects well in a very bright light. Vision greatly improved in a modified light. Always noticed a little white speck in center of pupil. Began to lose her sight in right eye five years ago; left eye apparently remained the same. Consulted an oculist about this time, who earnestly advised her to let the eyes alone, as nothing could be done.

STATUS PRÆSENS. — Both pupils dilated regularly under homatropine.

R. E.—A fully developed senile cataract, very faint form perception. All else is as usual in senile cataracts.

L. E.—A small dense opacity in anterior capsule directly behind pupil. This opacity is not larger than two pin-heads. The center of this spot is denser than its periphery which gradually shades off into the capsule and lens. Fundus indistinctly seen on account of the apparent incipient senile cataract.

By oblique illumination, this central opacity projects into anterior chamber about 2 mm. presenting the appearance of a small cone. Anterior chamber normal in depth. Form perception under full mydriasis, somewhat better than in the right eye. The remaining portions of lens not as cataractous as the right. The dense opacity does not extend into lens substance proper to any great extent; neither is the anterior capsule wrinkled or corrugated as sometimes occurs in anterior polar cataracts. There is no doubt but that there is an evident deposit of chalky material in this dense opacity. The pyramidal cataract is in a line with the antero-posterior axis of the eye. The remaining portions of the capsule and lens do not reveal any interference of nutrition, only the lens is becoming cataractous throughout. It is to be taken for granted that a condition of amblyopia ex anopsia existed previous to the development of the senile cataract on account of the anterior polar cataract. There is no question but that this is a congenital

anterior polar cataract, not as a result of the usual corneal inflammation *in utero*. For, no corneal opacity could be detected by any method of examination, and no evidence of any iritic inflammation could be found. Whether or not there was an inflammatory implication of the ciliary body and processes, pure and simple, could not be determined upon. The tension in either eye was normal. The left eye, the one with the pyramidal cataract, turned outward about $2^1/_2$ lines. The cataract in the right eye was extracted with a fair amount of vision resulting. This hastened the cataractous process in the left eye. From the foregoing remarks, we can notice that this congenital anterior polar cataract can not be ascribed to the usual causes:

1. Corneal inflammation with infringement of lens upon posterior corneal layers.

2. Perforation of cornea, and the lens thus coming in contact with the cornea.

3. Some form of iritis with an exudate thus implicating the lens and capsule.

The only cause to which we can properly attribute this cataract is to a trophic disturbance in the anterior capsule causing a proliferation of cells, and secondarily, or perhaps, primarily implicating the lens substance back of it. But why was it so limited in its extent, this trophic disturbance of capsule? We have no means of determining whether this pyramidal cataract was formed before the anterior chamber was developed or not. In fact this seems to be a minor point in the question of the formation. Be this as it may, its ætiology is not that which is customarily ascribed to congenital pyramidal cataracts.

As to the ætiology of congenital pyramidal cataracts, nothing whatever as far as the writer can determine, is said about nutritive disturbances in lens and capsule being recognized as such a cause. Why this nutritive interference is so limited, if it is an ætiological factor, is yet an open question. For myself, I can not give a satisfactory solution. That it is to be considered as a cause can be seen from the above cited case. We can readily understand why the apex of this pyramidal cataract should extend into the anterior chamber and not into the lens substance, from the fact of least resistance being offered by the aqueous to this proliferating mass of cells.

When the wrinkled or corrugated appearance of capsule is present, the cataract is to be looked upon as a result of localized inflammation with an exudate and secondary contractiou. That is to say, an inflammation limited to the anterior capsule exclusively. Even if the capsule has not this corrugation, the cataract may be considered as a consequence of localized inflammation of the capsule. What it is that gives rise to this inflammation of the capsule can not be determined on as yet. Finally, an intra-uterine iritis with a lymphoidal exudate may produce this variety of congenital cataract by the exudate being deposited upon the capsule and becoming united with the epithelium of the capsule. There is no apparent reason why an iritic inflammation of the above nature can not be considered as an ætiological factor. If it is due to this cause the chances are that the iris will show manifestations of inflammation when the child is born. Again, the question of heredity is not to be lost sight of. A few authorities lay considerable stress on this point. Can any weight be given to either of the above causes?

However, we can see that a congenital pyramidal cataract is not always necessarily the result of the lens coming in contact with an inflamed cornea *in utero*. Though it often results from this, in that during the earlier stages of the fœtus no anterior chamber is present. But, if the cataract is developed in the last stages of fœtal existence, an anterior chamber being present, it must be due to the former causes or perforation of cornea and then a distinct corneal opacity would supervene. No implication of cornea takes place in the former mentioned causes. So much for the ætiology of congenital anterior polar cataract.

Now as to their effect upon the acuity of vision, a word or two must be said. The majority of writers and authors maintain that little or no damage results as regards sight. This is very erroneous and decidedly misleading. An anterior polar cataract can not but help deteriorate vision to an appreciable extent. Its very position and nature will preclude the existence of good vision. In the above cited case the patient was cognizant of poor vision. Again, nystagmus may result if the cataract is bilateral; also convergence or divergence of the eye may occur with resulting amblyopia. Forsooth, the vision is greatly reduced if a corneal opacity co-exists with the

cataract. All admit damaging results to vision in these cases, but not any when the corneal opacity is minute or practically absent. Fortunately, an anterior polar cataract is more often unilateral than bilateral. Probably this may have influenced many authorities in saying that there is no evident effect upon vision. You can readily see how the size of the pupil and the extent of the cataract would influence good vision. However, if the polar cataract is not directly back of the pupillary area, but more towards the periphery of the lens, than its effect upon the vision is less manifest. That this is so is self-evident. Furthermore, a certain amount of lenticular astigmatism must be taken into consideration; this is a varying quantity.

In behalf of the treatment, the statements made by Fuchs, Knapp, Swanzy, and other equally good authorities are as ambiguous and inconsistent as their view upon the influence on vision. The greater majority of operators dispense with the subject by saying, "Treatment none." I beg to differ with all who make such a sweeping statement. For, there is a very efficient remedy for these cases, and good results gained if put into execution. Yet, suitable cases must be selected. An iridectomy for optical purposes will be as justified a line of procedure as removal of the lens in senile cataract. For the iridectomy make as small a corneal incision as possible, so as to avoid any very great amount of corneal astigmatism resulting. My experience with several cases allows me to make this statement. By performing an iridectomy, you restore a larger range of vision, avoid a tendency to amblyopia, nystagmus, divergence or convergence and make an excellent attempt for the restoration of binocular vision as it were. Are not these points worth while striving for? Are we not justified in attempting their achievement, other things being equal?

Happily for the patient, these cataracts are only partial and stationary; hence offer good results when subjected to an iridectomy, contraindications being excluded. I have operated upon three cases of this nature, one without any corneal opacity, and the other two with an opacity. And, I can modestly assert that I have achieved good results. Naturally, in the absence of corneal opacities, or when the corneal implication is rather slight, the operation yields very gratifying results. Certainly the amount of success obtained is very dependent upon the extent of the pyramidal cataract.

Finally, though it appears rather strange to have a genuine senile cataract develop in an eye which already possesses a congenital pyramidal cataract of the above description, yet, it is undoubtedly a perfectly normal sequence of pathological conditions. The one being local and limited, the other general, why should they not at times make their appearance in one eye? It is only a peculiar combination rather than an improbable or impossible one. Perhaps, too, I may be amiss in making this assertion, if so, I trust you will rectify the same.

In conclusion, allow me to recapitulate the salient points as follows:

1. An anterior polar cataract is damaging to the sight of the patient.

2. There is a suitable mode of treatment in certain cases, statements to the contrary notwithstanding.

3. That there are other conditions which give rise to anterior polar cataract than those usually found in text-books.

4. That senile cataract can develop in an eye possessing a polar cataract.

5. That the statements made by the majority of authors are misleading.

6. That the congenital variety is less frequent than the acquired and that it is more frequently unilateral than bilateral.

DISCUSSION.

DR. FRYER.—I want to congratulate the Doctor on his very admirable paper. I think the large majority of the oculists will agree with him as to the ætiology, and as to the practice in bettering these unfortunate conditions. I agree with what the Doctor states in regard to the positive interference with vision, and that the proper attention has not been given by prominent men to that point. If the iridectomy is done, I think the majority of oculists will agree in the necessity of its being done early or we will have the amblyoyia, which the Doctor speaks of. Then it is too late. I believe that the Doctor does not state that this is always unilateral; that it is so in a number of cases. My experience is that in congenital cases, while there may be a difference in degree, yet there is usually a slight opacity in the fellow eye, even if it is not enough to interfere very materially with vision. But in the majority of

cases, I believe that both eyes are affected, although to a different degree.

DR. J. O. STINSON.—I wish to say that I am in accord with the views of this paper. I call to mind now two cases in which I made operations along the lines advocated by the Doctor, notwithstanding the fact that my early teaching was contrary to this line of practice. I have in mind now a case operated on as long ago as 1878. The child at that time was a boy of 7 or 8 years of age, and was brought to me as a blind child. I made an iridectomy. That young man to day holds a position as book-keeper in a prominent wholesale house, he travels everywhere, sees to do anything that anybody cares to do, and is enjoying good sight, and probably will as long as he lives. I have seen a number of these cases in the Indiana Institution for the Blind. They are sent there as blind people, and are regarded as blind people, and study the blind methods. When a patient of that kind remains in an institution for the education of the blind a number of years and learns to read by the blind method, the full advantage of the benefits to be derived by operation are not likely to be appreciated, and the friends of the patient are more or less likely to regard an operation as dangerous or risky. I can not see for my part why an iridectomy should be attended with any more risk under ordinary circumstances in a case of that kind than it should be in any other case where it is indicated. The other case was in a person in which I made a double iridectomy, with corresponding good results.

Now of course my idea is that the iridectomy ought to be small—not very large, and it ought to be made downward, provided the cornea is clear in this neighborhood, for the simple reason that when the eye will rotate down the palpebral margin will cover the deformity, and in that way we get a cosmetic effect which is beneficial, whereas, if the iridectomy is made upward this relief of the cosmetic difficulty will not be so apparent, neither will the sight be so good. As I intimated before, I do not see why, in these cases, unless there is some other lesion such as some retinal disturbance, an operation of this kind is not altogether justifiable, in fact why it should not be really recommended. My early teaching was against this operation in these cases.

DR. ALT.—I would like to say a few words on this subject.

In the first place, I have heard a number of doubtful statements regarding older writers, and in the second place, I am astonished to hear that the early teaching of these gentlemen was against an operation in these cases. My early teaching was decidedly in favor of making iridectomy in the clearest meridian, a small iridectomy, just as we do in lamellar cataracts. But a number of cases in my own practice as well as in the practice of others, and of the best operators, have led me to be very careful about making iridectomy in any of the cases, unless I feel perfectly certain that good vision will result. I have seen quite often that iridectomies—well-made operations, and by the best operators—resulted in no improvement of vision. This fact we can quite readily understand. I believe that in all these cases of anterior polar cataract there exists also an irregular lenticular astigmatism and this astigmatism can not be taken into consideration when figuring on the result. My practice, therefore, has been instead of making iridectomy, to do away with the lens altogether, and I think that the results of such practice are eminently superior to the iridectomy for optical purposes in cases of anterior polar cataract. I have had an opportunity in quite a number of cases in my private practice and in several blind schools to operate in this manner and I do not think I have anything to regret. But I do regret that in a number of cases in which I performed iridectomy, and which promised good vision, no good result was obtained, and as I now believe, not because there was some other disease in the background, but in consequence of the irregular lenticular astigmatism which was present. That in cases of anterior polar cataract we should have irregular lenticular astigmatism is not to be wondered at. Here we have a crystalline lens with a cone in front of its anterior pole or near it, included in the lens capsule and bulging it out in an irregular manner. Sometimes it is even divided from the lens substance by a newly formed lens capsule at the back. The statement was made here that an iritis might cause anterior polar cataract. I do not see how this could be. We have to deal with a new product inside the lens capsule which may perhaps result from an intracapsular inflammatory process, but hardly from an iritis. So far as I know, and I have examined three cases histologically, there is some new-formed tissue in front of the real lens tissue inside the lens capsule and in this new-formed

tissue there may be found deposits of lime. The manner in which this tissue is formed we do not know. Then we have to deal with congenital polar cataract, but I believe it is due to some irregularity in the development of the original lens, before the anterior chamber is formed. That anterior polar cataract does also happen in consequence of anterior synechia of the crystalline lens I know from several cases in my own practice. I have several times seen anterior polar cataract develop in consequence of perforation of the cornea in children. Yet I think the very fact that in most cases, as far as my experience goes, anterior polar cataract is binocular, shows that we have in such cases to deal with congenital ones and that they are in all probability not due to perforation of the cornea—that is, an intra-uterine ulceration of the cornea, as O. Becker assumes. As I say, however, I have seen anterior polar cataract develop under my eyes after corneal perforation in childhood.

DR. BARK.—My views are like those of Dr. Alt's. I think only in the minority of cases of iridectomy will we get good results, so far as vision is concerned, and the reason for this is, the irregular lenticular astigmatism. In all sections published of such cases there is around the cone periphery a very irregularly curved anterior lens capsule and only the most peripheral portions are relatively smooth. This is the explanation of bad vision in the majority of cases. And this is not improved by an iridectomy. Still I believe that in many of these cases iridectomy may be tried first, and if the result is not such as it should be, the only proper procedure would be their removal of the entire lens by one method or another.

DR. ALT.—In answer to Dr. Bark's remarks I would say that I do not think it wise to first make iridectomy and, if no good results, make an operation for the removal of the lens, because after the iridectomy you have a maimed pupil and post-operatory corneal astigmatism and vision can not then be as good after the removal of the lens, as it might have been without iridectomy.

DR. WHEELOCK.—The remarks of Dr. Alt and Dr. Bark have recalled to my mind a case of anterior pyramidal cataract in which I was requested to operate for optical purposes. I selected for the best site of the operation a downward and inward direction. Before I made the operation I se-

cured a complete dilatation of the pupil, attempted to correct any possible astigmatism, and succeeded in getting vision from $^{20}/_{C}$ to $^{20}/_{L}$. I advised an iridectomy downward and inward, and performed the operation very cleanly; I got a very nice result from a surgical standpoint, but, I am very sorry to state, when I came to adjust the lens I failed utterly in securing any useful vision. While I had got it in my office before the operation, glasses afterwards were of no use. I believe that lens-astigmatism will stand in our way of success in most of these cases. At any rate, whatever is done should be done very early in the life of the child.

DR. COLBURN.—My experience with iridectomy in such cases has been rather limited, but I was also so unfortunate as to have failed in getting good results from the operation; and I have found that the needling and destroying of the lens by absorption promised and gave me the best results, so that unless I am sure of a good result I would not perform iridectomy. The Doctor making the last remards touches the key-note of our failure in giving a correction after we have made an iridectomy. We may get a theoretical correction before the operation, but when it comes to applying the glasses afterwards, I do not think we often accomplish much. My experience is fully like Dr. Alt's—in favor of the needling operation. I think if it is done early we will have good results; in later life we have to make the best of a bad matter. Within the last two years I have ripened such a lens, after Foster's method, and then extracted, and I have had a very good result.

A GENERAL CONSIDERATION ON THE ETIOLOGY AND TREATMENT OF CHORIOIDITIS NON-SUPPURATIVA.[1]

BY WILSON E. DRIVER, M.D., NORFOLK, VA.

TO APPEAR before such a distinguished medical body, I am proud of the privilege, and to be allowed to partici-

[1]Read at the Second Annual Meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association, held in St. Louis, April 8–9, 1897.

pate in the deliberations of this scientific congregation is to me a great compliment.

While I have brought no "Jewel from the East," it is my desire, in presenting the subject which I have selected, simply to open a discussion among the physicians present which will benefit all and from which I shall gather valuable information.

Chorioiditis non-suppurativa is the most common, fatal disease seen by the eye surgeon; still, strange to say, little literature exists upon the subject: so little is written in the text-books, and so seldom do we see the subject mentioned in the journals, I take it the consideration it deserves it is yet to receive. Soelberg Wells, Fuchs, Noyes, and others speak of chorioiditis as a common and grave disease; the student, though, can but be impressed with their succinct mode of dealing with this all important subject. The want, too, of innumerable hypotheses as to cause and treatment, is strikingly conspicuous.

Numerous subdivisions have been made, and names given to the forms of chorioidal lesion, all of which are based upon the peculiarities of location and arrangement. Is it not high time that our attention be turned to the etiological factor, and to it should not our nomenclature have some regard? This once accomplished, our treatment will soon be on a more rational basis, and results much more gratifying.

Other diseases occurring in persons robust and otherwise healthy, and without obvious cause, are usually attributed to divers constitutional conditions, but chorioiditis is invariably put down as being a result of either inherited or acquired syphilis.

In my personal experience, so large a percentage of eyes affected with this disease, after an active, anti syphilitic treatment, have gone to the bad, that I am compelled to think that the true cause is as yet unknown. I have long since found it necessary to look for some other cause. It is true, we do see chorioiditis due to syphilis, but in these cases we invariably see other manifestations of the disease, and are sometimes successful in getting a syphilitic history.

Chorioiditis disseminata and serous chorioiditis were the subdivisions of chorioiditis non-suppurativa made by Dr. Adolf Alt in his clinical report of eye diseases treated at the New York Opthalmic and Aural Institute in 1876. These are two

forms that will concern us in this paper. It is to the former that I first invite your attention.

In this disease (chorioiditis disseminata) an anti-syphilitic treatment always proves more or less a specific. Merely from the structure of the choroid we should expect it to be often the seat of the disease. It seems to possess few or no sensory nerves, since inflammation of this membrane usually runs its course without producing any sensation of pain. The eye looks normal externally, and the disease manifests itself to the patient only through the disturbance of sight, and the physician recognizes it only through an ophthalmoscopic examination. So long as the inflammation is recent, symptoms of the irritation of the retina manifest themselves in sensations of light, such as spots before the eyes, sparks, balls of fire, etc. The patient is usually seen by the specialist after the symptoms have existed for several weeks. If the case come under his observation in the beginning, by an ophthalmoscopic examination he sees yellowish, distinctly outlined spots which lie beneath the retinal vessels upon the red fundus oculi. These spots are scattered, more or less, all over the fundus. They are small, circumscribed, isolated, and do not exhibit any tendency to coalesce, even when they are grouped closely together. The yellow matter is the exudate which hides the red of the normal choroid. Resorption may take place at this stage, leaving the choroid more or less atrophic, and the places converted into cicatricial connective tissue. Usually, though, our patients are seen in a later stage of the disease, in which the retina is involved, the exudate passing not only into the superimposed retina, but also through the latter into the vitreous. Opacities of the vitreous thus produced are hence an almost constant accompaniment of chorioiditis, and with the ophthalmoscope the diagnosis is made. The course of this form of chorioiditis is chronic, opacities lasting for many months. The prognosis must be guarded, though in a large majority of cases we are able by an active treatment to preserve useful vision, and as the treatment must have regard mostly to the etiological factor, I can but urge an energetic anti-syphilitic treatment.

Sometime since, Dr. Robert L. Randolph, of the Johns Hopkins Hospital, reported two cases of very pronounced disseminated chorioiditis, with preservation of the normal acute-

ness of vision. He attributed the disease to syphilis, but could not establish a syphilitic history.

This condition, with all that is characteristic of syphilis, demands the same treatment: Iodide of potash, mercury in its various forms, and especially is recommended treatment by inunction. The cachectic and anæmic will be much benefited by cod liver oil and the ferruginous tonics.

Now, as to chorioiditis centralis, or serous chorioiditis. Undoubtedly, its names have been based solely upon its peculiarity of location and arrangement. It, too, has been attributed to syphilis, and the principal treatment has been an antisyphilitic one.

Mr. Hutchinson has classified all chorioiditis into twelve groups; still I do not find this special form among them. Of those he mentions the third and fourth alone concern us in this present inquiry. The third class is senile chorioiditis, or Tay's chorioiditis, always central, and met with in those past middle life. The fourth, or hereditary chorioiditis, varies in form, often beginning in childhood, but sometimes not until middle life. Several members of the same family are affected, and the changes are usually aggressive, without syphilitic history. As the form under consideration is neither senile nor hereditary, it does not fall under Hutchinson's classification.

In serous chorioiditis the patient's attention is directed to the eye by various disturbances of vision. As to the differential diagnosis from chorioiditis disseminata it can not be made on the subjective symptoms, as they are practically the same, save more intensified.

The implication of the choroid and retina in the region or at the macula lutea seriously modifies the vision and causes a secondary scotoma. The vision is diminished as a whole, too, on account of the cloudiness of the vitreous and hyperæmia of the retina.

The patient is generally robust, strong and healthy, and usually between the ages of eighteen and thirty-five years. It is seldom that both eyes are affected at the same time, in contradistinction from chorioiditis disseminata, which is usually a bilateral disease.

We practically never see the patient at the beginning of the disease, and even if we did see him at the very beginning it is not probable that we should recognize the pathological

conditions, as the structural changes in the choroid, so long as they are confined to its deeper layers, and, therefore, at the commencement, are almost entirely concealed by the pigment layer of the stroma. Later on, pathological conditions are concealed from view by development of secondary conditions, such as turbidity of the ocular media, floating bodies in the vitreous, and small opacities on the posterior wall of the cornea. These small particles of pigment that are simply stuck on the posterior surface of Descemet's membrane should not be mistaken for keratitis punctata, as keratitis punctata is commonly associated with, and frequently seen, in chorioiditis disseminata.

Differential diagnosis, from chorioiditis disseminata: No specific history and no visible manifestation of syphilis. Patient in every other way healthy; small spots on posterior surface of cornea (keratitis punctata in chorioiditis disseminata); anti-syphilitic treatment of little or no effect.

It seems by common consent that the etiology of serous chorioiditis is a mystery. Dr. George M. Gould, of Philadelphia, attributed the disease to ametropia (especially compound hyperopic astigmatism), and reported many cases to illustrate his theory. Most writers have attributed it, along with other diseases of the chorioid, to syphilis.

I have looked upon the disease as being of rheumatic origin, from its resemblance to, and common association with, spongy iritis. My treatment has been the same, and results have been fairly satisfactory.

From the location of the disease the prognosis is necessarily unfavorable. When the optic media are cleared, we find large central atrophy or atrophies, and a serious modification of vision, it being of no practical use in many cases, though a number of cases have been reported in which acuteness of vision has been preserved. Nettleship reports a case of severe central chorioiditis with almost perfect acuteness of vision. In February, 1893, Darier reported a case in which vision was brought up to normal by a subcutaneous injection of corrosive sublimate.

As to treatment; I rely upon blood-letting, the Japanese hot box, and salicylate of soda. In recent cases with hyperæmia of the retina five or six leeches are applied behind the mastoid process, or abstraction of blood is made with Heurte-

loup's artificial leech. The glass cylinder is filled with blood two or three times. If there is pain, the grateful hot box is applied. The patient is at once put on salicylate of soda, 15 to 20 grains every three hours, day and night. I look for speedy clearing up of the vitreous and a disappearance of all unpleasant symptoms.

DISCUSSION.

DR. CORR. — I wish to speak in commendation of the paper, and also to record my hearty indorsement of the doctrine which the gentleman has maintained. The puzzle which presented itself to him is one which also presented itself to me when I first began the study of ophthalmology. I was struck with the fact that the books and teachers said that almost all forms of chorioiditis were of syphilitic origin. It is needless for me to say that in several papers which I have read before different associations and which have been published I have maintained that the trouble may arise irrespective of the existence of syphilis, and that these cases will get well without anti-syphilitic treatment. I do not know what its origin is, probably in many cases rheumatism, but the idea of prescribing mercury and iodide of potassium in chorioiditis has struck me as something like the statement of Dr. Noyes, who records in his book, that in some new game of cards, when you do not know what else to do, play your trumps.

DR. TIFFANY.—I just want to add to what Dr. Corr has said, that chorioiditis, in my opinion, does not always have its etiology in syphilis. I have found it due, as I thought, to consanguinity. Why this should be I do not know; the offspring of cousins, in my observation, almost always have chorioiditis.

DR. SUKER.—I think Dr. Driver is to be complimented on the clear expression of his views in the paper. All the younger ophthalmologists, I suppose, have experienced the same trouble he did in this matter. I did. As regards every case being syphilitic, I oppose it. I do not see how it can be. I know it is generally the custom for the younger men to follow the dicta and statements of the older members of the profession. I have had occasion to see in a large clinic many cases of chorioiditis—of eye trouble in syphilitics, but I have also seen many cases where there was no trace of syphilis. Often mer-

cury has a good effect, but I always give strychnia with it, and with good results.

DR. DRIVER. — I have not much to say in closing. I brought this subject up because I think a large number of patients are treated on the theory that they have some remote form of syphilis and I think we are too much in the habit of putting our patients on anti-syphilitic treatment; it does not matter who the patient is, if he has a chorioiditis we adopt as a routine treatment anti-syphilitic treatment—in other words, we prescribe mercury and iodide of potash. I think a differential diagnosis should be made in these cases as it is such a grave thing—such a serious thing, to pronounce a case syphilitic. That was my object in presenting the paper. It seems that the teachers in the country are in the habit of teaching that chorioiditis is due to syphilis. I was for a time resident physician at a hospital in Baltimore in connection with which there was a large clinic, it was an eye and ear hospital, and for several years while I was there, although in our syphilitic cases we could find syphilitic iritis and other manifestations of syphilis, it was seldom we saw a chorioidal lesion, and especially the acute form, which comes to your office with a disturbance of vision of a few weeks' duration.

ON RETARDED CLOSURE OF THE WOUND, AND SOME RARE ACCIDENTS AND SEQUELÆ OF CATARACT EXTRACTION.[1]

BY CARL BARCK, M.D., ST. LOUIS, MO.

WITHIN the last years, I have observed the following three cases of unusually slow closure of the wound after extraction:

CASE I.—Captain G., aged 52 years, was operated on in the spring of 1893 for a mature cataract of the right eye. Patient was in perfect health. The operation performed was

[1] Read at the Second Annual Meeting of the Western Ophthalmological, Otological, Laryngological and Rhinological Association, held in St. Louis, April 8-9, 1897.

simple extraction, and was easy, and perfectly normal. The anterior chamber failed to become re-established at the usual time; it remained absolutely empty. The wound was clean and free from iris, capsule or lens substance; the pupil small and perfectly round. There was never any irritation around the lips of the wound nor any pain. Spastic entropium of the lower lid could never be noticed during change of bandage. The wound simply did not unite, and this not only partially, but in its entire extent. Upon the slightest pressure with the lower lid against the cornea, it gaped from one end to the other. In spite of eserine, compressive bandage, and strict rest, this state of affairs continued unaltered for eighteen days. Constitutional disorders were inquired into, the urine repeatedly examined for albumen and sugar, without result. By an unfortunate accident on the mentioned date, infection took place, and the eye was lost by suppuration of the cornea.

CASE II.—In May, 1895, the patient returned, the cataract of the left eye having become mature in the meantime. The simple extraction was again perfectly smooth and regular, but the identical course of healing took place as before in the other eye. The wound did not close, the anterior chamber remained empty for more than two weeks. No cause for the retarded closure could be found. Never the slightest symptoms of irritation. Again the urine was examined, without result. I do not need to mention that extraordinary precautions were observed during the after-treatment. On the nineteenth day, at last, the anterior chamber was found to be re-established. The bandage could be discarded on the twenty-fifth day and the patient dismissed soon afterwards with a round pupil, and a vision of nearly $^{6}/_{VI}$.

CASE III.—B. H., a gentleman aged 73 years, was operated on in September, 1896. Cataract not fully mature. Iridectomy. The anterior chamber remained empty, at first entirely, and later on nearly so for two weeks. This was due to a leakage of a small area in the outer portion of the wound, where a small piece of capsule had been caught between the edges of the wound, preventing their union. I was frequently tempted to reopen and remove the piece, but the patient was very nervous, so I abstained and relied on compressive bandage and atropine. The wound closed finally, the condition having given rise to a slight iritis, which abated under the

usual treatment. Immediate result, fairly good; after discission, V. = $^{6}/_{XII}$.

I believe that the conservative course pursued is the best one in these instances, and that operative interference is not indicated.

The modern text-books by Roosa, Fuchs, Schweinitz, Norris–Oliver, Berry, Noyes, Juler, Fick and Panas are silent upon the subject under consideration. Besides an occasional remark by Berry, to which I will return hereafter, the only reference to cases of retarded closure of the wound which I find in the literature at my disposal, is by Becker, in "Graefe-Saemisch's Hand-Book," Vol. V, page 361. He says:

"In rare cases the wound does not close on the first day, so that the anterior chamber is found empty at each visit. I have seen such a condition (which is well known to us from our operations for glaucoma) last from five to six days, even after perfectly normal extractions. Jacobson reports a case, in which the wound did not close before the fifth week. The eye, as a rule, does not present any symptoms of irritative reaction, and the termination is a favorable one. I therefore consider a late re-establishment of the anterior chamber as a rather favorable circumstance, as to the final result. The impression to be gained is not that the wound would remain open in its entire circumference, but that there is a leakage at a very small area, through which the aqueous escapes, either continuously, or at intervals. If a conjunctival flap has been formed, the escape of aqueous is recognized by the œdema of the conjunctiva due to infiltration. If the section has been made entirely in the cornea, this symptom is wanting. But on the other side œdema through infiltration may be present, and the anterior chamber re-established. This takes place if the escaped aqueous within the conjunctival tissue is under a pressure equal to the intra-ocular pressure. If in such instances the conjunctiva is punctured, the anterior chamber will become emptied also. The conclusion, that the wound does not remain open in its entirety, rests upon the experience that the appearances at the lips of the wound take the normal course as mentioned above. Surely, it might be conjectured, that the place where the wound remains open, would be characterized by a circumscribed inflammation. But I could never find such a place. The cause of a retarded closure may be due to the

wound, if it happened to be jagged, giving rise to an incomplete apposition of the edges. But a more frequent cause is probably the fact that remnants of the lens or of the capsule become lodged in the wound, and keep it gaping, and make an escape of aqueous around them possible."

My last case is a plain illustration of this category.

Becker adds furthermore: "These cases, with a good prognosis, must not be confounded with those in which an increased intra-ocular pressure is the cause of the retarded closure. In these, there exists the dangerous complication of an overlooked or newly-developed glaucoma."

This complication is evidently out of question in the first two cases which I have reported, and the remarks by Becker give as little explanation as I can offer myself. There was no constitutional diathesis and the patient in usual good health when seen lately. There was never any foreign substance between the lips of the wound, never inflammatory symptoms, and the result in the one eye good, and would most probably have been similar in the other, had no infection taken place.

The case is unique, in so far as the slow closure occurred in both eyes in an identical manner, the operations being done three years apart. The only case in which the wound did not close for the same, or even a longer period. is the one of Jacobson, mentioned by Becker, and is attributed by him to blepharospasm. His report in *Graefe's Archives*, Vol. XI, p. 194, is as follows:

"I recollect an old forester, upon both eyes of whom I had operated with good result. The patient had some blepharospasm and the aqueous of the left eye escaped regularly, as often as I left the bandage off, during the first three weeks. After I had convinced myself of the constancy of the condition, I kept the eye closed by compressive bandage for ten days and nights in succession, after which time the wound was closed."

As to this treatment, Berry, to whom I alluded previously, gives the opposite advice. He says in his text-book (latest edition) page 690:

"The wound has generally so far healed by the time the first dressing is changed, as to have permitted the chamber to become re-established. If there should be no chamber after two days, an unusual, though occasional occurrence, it is bet-

ter to remove the bandage and replace it by a light one, which exerts no pressure at all upon the eye."

I have followed in the treatment of my cases the example of the first author. But I believe that the point of Berry is well taken for cases of spasmodic entropium of the lower lid, under the bandage. These occurrences are not rare. I have witnessed them repeatedly, and most of you probably also. If the lower lid can not be prevented from inverting by collodion, it is advisible to leave the bandage off as soon as admissible. But I have never seen that this spasmodic entropium interfered with the closure of the wound and re-establishment of the anterior chamber. Jacobson's case seems to be the only one on record as far as this consequence is concerned.

To sum up:

The most frequent cause of unusually slow closure of the wound are foreign substances, iris, vitreous or capsule within the edges of the wound.

A rare cause is blepharospasm and spasmodic entropium of the lower lid.

In some instances, as in the two cases reported, a satisfactory explanation is still wanting. (Perhaps one of the gentlemen present is able to give it).

The treatment in the first and last category of cases, consists of a well applied compressive bandage, and strict rest. Operative procedures for removing foreign substances from the wound are rarely indicated.

In instances of spasmodic entropium the measures are directed against this condition.

Extraction of cataract, after the discovery of cocaine and with the introduction of aseptic methods, is considered to-day as a relatively simple operation, and our losses have since been reduced from 3 to 2 per cent. But from time to time unexpected conditions and emergencies may be encountered, which must be recognized immediately, and the best course of action quickly decided and acted upon. Not all of such accidents are mentioned in the text-books and each operator may find himself face to face with a complication that he has never heard or read of. In the July number of the *Archives of Ophthalmology*, 1896, Dr. Oliver, of Philadelphia, reported a number of such cases and I thought it would not be without value

to collect and place on record those which I happened to meet with in my practice of 13 years.

CASE I. *Breakage of Point of Graefe's Knife in Anterior Chamber.*—In April, 1885, I extracted the mature cataract of an elderly lady. The Graefe knife, which had never been used before, had been sterilized in absolute alcohol and tested by the usual method, without observing anything particular. The entrance puncture did not meet with any difficulty. The patient then made a slight motion with the eye, and at the attempt of the counter-puncture the point of the knife broke off, and fell to the bottom of the anterior chamber. I withdrew the blade without loss of aqueous humor, took another knife, entered through the original wound and completed the section as usual. Then after admonishing the patient to keep the eye as quiet as possible, I entered with the iris forceps, caught the broken-off piece at the first attempt and withdrew it. The subsequent steps and the healing process were regular, with good final result.

The broken piece was slightly over one millimeter long. On inspecting the fracture line of the knife with a magnifying glass, it presented a small oblong space in the center, somewhat excavated, which looked rough and dissimilar to the smooth edge surrounding it.

Dr. Oliver (*Loc. cit.*) has reported a case where a minute fragment of Graefe's knife broke off at the counter-puncture and remained imbedded in the sclera. Attempts of removal with magnet and iris-forceps failed; and he left it *in situ*, extracting the cataract subsequently. It never afterwards gave rise to irritative symptoms.

CASE II. *Spontaneous Ejection of Lens Into the Air in an Unruly Patient.*—An old nervous gentleman, operated on in the spring of 1894, proved to be so unruly at the commencement of the operation, that I changed the screw speculum for a Desmarres' speculum, held by the assistant. Simple extraction. Immediately after the capsulotomy he squeezed so forcibly that the total lens was ejected, rising at least one foot in the air, and falling down upon the patient's head. The speculum was quickly withdrawn. No escape of vitreous. On inspection some time afterwards, it was found that the cornea had collapsed entirely. But no prolapse of iris, pupil round. The eye did well until the fourth day, when on account of the

behavior of the patient, a partial opening of the wound took place, into which the iris became lodged, causing iritis and closure of the pupil. A subsequent iridotomy brought the vision up to $^{6}/_{L}$.

Cases of this kind are not so rare. Had the speculum not been exchanged in expectation of some irregularity, loss of vitreous would have occurred most probably. In a similar instance, in the future, I would add an iridectomy secondarily, if simple extraction has been attempted at first.

CASE III. *Extraction of a Hypermature Cataract in an Alcoholic. Delirium. Two Traumatic Hæmorrhages on Fourth and Seventh Days. Recovery.*—The patient, aged 58 years, was a saloon-keeper, but he did not exactly make the impression of a drunkard. The attempt to remove within the capsule the hypermature somewhat shrunken cataract of twenty years' standing failed, and the small nucleus and detritus was removed after capsulotomy. The course of healing during the first three days was regular, and after the second day the patient was allowed a moderate quantity of stimulants. In the night between the third and fourth day he became delirious and injured the eye by a heavy blow with his own hand. The next morning the bandage was saturated with blood, the wound partially gaping, and two thirds of the anterior chamber filled with blood. The origin of the hæmorrhage could be traced to one of the edges of the iris, made by the iridectomy. The following days were exciting; but under the usual treatment and careful attention by nurses the wound closed again and the hyphæma became smaller. No undue irritative symptoms had set in. In the night between the seventh and eighth day he became more delirious than ever, and while combatting with the attending nurse, during an attempt to get out of bed, the eye received a second blow. The wound was open in nearly its full length the next morning, and the entire anterior chamber was filled with blood. I removed a certain quantity of it by mild pressure upon the lower edge of the cornea, and gave a rather gloomy prognosis. But even then no inflammation set in, the wound became reunited, and the blood was resorbed during the next week.

Final result $^{6}/_{XXXVI}$ with a black pupil. On account of an old corneal opacity this was about the highest result to be expected.

I have since extracted the mature cataract of the other eye without accident and full result of $^{6}/_{VI}$, after the patient had observed strict temperance for some months prior to the operation.

CASE IV. *Cataracta Lactea Without Nucleus in an Adult.* John N., Italian, aged 51 years, presented himself six months ago, with a mature cataract in the left and semi-mature in the right eye. Vision in the left eye had commenced to fail two to three years previously. I inquired into this point closely after the operation, and he was positive that he could see with the eye three years ago as well as ever before. The appearance of the lens presented the usual picture of a mature, cortical cataract.

Simple extraction. After the capsulotomy a white milky fluid filled the anterior chamber and poured from there through the wound. My first thought was, that I had to deal with a Morgagnian cataract, and I waited for the nucleus to make its appearance. But no trace of such could be seen.

The pupil became deeply black immediately after the escape of the milky fluid. Healing process regular. A discission of the web-like capsule on the eighteenth day brought the vision up to $^{6}/_{XIII}$.

Cataracta lactea is most frequently congenital; besides it is sometimes met with in young individuals where no distinct nucleus has yet formed and where in consequence after a term of years the whole lens substance becomes liquified with more or less shrinking of the capsule.

In adults the cortical substance only may become liquid, whilst the hard nucleus withstands the condition, called Morgagnian cataract. Of cataracta lactea at the age of 51 I could not find another single instance in the literature at my disposal.